(19) JAPANESE PATENT OFFICE (JP)
(12) Official Gazette for Laid-Open Utility Model Applications (U)
(11) Japanese Laid-Open Utility Model Application (Kokai) No. Showa 58-136813
(43) Disclosure Date: 14 September 1987
(51) Int. Cl.³: B 60 H 3 00
Classification Symbols:
Internal Office Registration Nos.: 6968-3L
Request for Examination: Not yet submitted
(All pages)

(54) Car air-conditioner device

(21) Application No.: Showa 57-33820
(22) Filing Date: 12 March 1982

(72) Designer : Yoshiyuki Hagiwara
c/o Oihama Plant, Nissan Automobiles K.K,
1-banchi, Natsujima, Yokosuka-shi
(72) Designer : Kenzo Hirajima
c/o Oihama Plant, Nissan Automobiles K.K,
1-banchi, Natsujima, Yokosuka-shi
(71) Applicant: Nissan Automobiles K.K,
2-banchi, Takara-cho, Kanagawa-ku,
Yokohama-shi
(74) Agent: Patent Attorney, A. Sugimura (and 1 other)

OIPE JC68 DEC 27 2000 PATENT & TRADEMARK OFFICE
RECEIVED
DEC 28 2000
TECHNOLOGY CENTER 3700

SPECIFICATION

1. Title of the Design: Car air-conditioner device

2. Claims

1. Car air conditioner which comprises: blow-out ports for blowing out air, separately, from at least 2 positions in the car; an air passage through which air passes separately from an air intake port by way of an evaporator to each of the abovementioned blow-out ports; a common heater core through which passes, to warm the air, a portion of the cool air which flows through each of the air passages; and a warm-air passage in which warm air is taken out from respective separate outlets of the common heater core to, in the vicinity of the abovementioned blow-out port, flow into the cool air of the abovementioned air passage, which air-conditioner device is characterized in that blind shutters are provided in the abovementioned warm-air passage and, in the case where at least one of the blow-out port air passages is in a full cool state, the abovementioned blind shutters of the warm-air passage leading to this air passage are successively cut off.

3. Detailed Dascription of the Design

The present design relates to a car air-conditioner device, in particular, to the improvement of an air conditioner with a configuration in which, by way of example, there are at least two independent points for air conditioning such as the front seat side and rear seat side.

Examples of conventional air-conditioner devices of this type include the one shown in Figure 1. In the figure, reference 1 is an air conditioner air intake port, and references 2 and 3, which are first and second blow-out ports, are deployed so that the first blow-out port 2 blows out warm air or cool air to the front seat side and the second blow-out port blows out warm air or

cool air to the rear seat side; and reference 4 indicates a defroster blow-out port.

The configuration is such that, a blower motor fan 5 is provided in the downstream side of the air intake port 1 and, the air suctioned in by way of the air intake port 1 by the blower motor fan 5 is cooled and has the moisture removed by an evaporator 6, following which it is separated to flow through, respectively, a first blow-out port side air passage 8 and second blow-out port side air passage 9 partitioned by a partition plate 7 and, in accordance with the open/close position of an air mix door 10 on the passage 8 side and an air mix door 11 on the passage 9 side, part of the air passes through a common heater core 12 and is heated, and, by way of first and second blow-out port side warm-air passages 14, 15 partitioned by a partition plate 13 provided in the outlet side of the heater core 12, it is mixed with the cool air of the first and second blow-out port air passages 8,9 forming a warm air of a temperature correspondent to the degree of opening of the air mix doors 10 and 11, and the warm air which flows through the first blow-out port side air passage 8 and second blow-out port side air passage 9 respectively is separated by a through-connecting door 16 and partition plate 13 to be blown out from the first blow-out port 2 and second blow-out port 3 without mixing. As a result, separate warm air from the first and second blow-out ports 2, 3 are blown out to respective positions within the car. In addition, when the through-connecting door 16 is in a position in which it closes blow-out port 3, this results in the air which is to be discharged from the blow-out port 3 being converged on the blow-out port 2. Accordingly, by using the blow-out port 2 for the front part seat, and the blow-out port 3 for the rear part seat, if there are no passengers in the rear seat, this can be used to increase the air conditioner capability in the front seat. In addition, it is configured in such a way that the air is

sent by way of a defroster blow-out port 4 using a defroster door 17.

However, in a conventional car air conditioner device such as this, there are problems in that, because the structure is one in which one heater core is jointly used, the air directly following the heater core is suctioned at the post heater core flow side whereby performance is reduced at times of full cooling.

The present design is one which focuses on this problem of the prior art, the objective of which is to solve the above-described problems by the deployment of blind shutters in the air passage directly following the heater core outlet wherein, in the case where the air mix door is in the full cool state, the blind shutters are closed whereby the heat from the heater core is successively cuts off.

A description of the present design is given below based on the diagrams.

Figure 2 shows one embodiment of the present design; the same sections as the conventional structure are represented by the same reference symbols as used in Figure 1, and the description thereof is omitted. The present example, as shown in the figure, is configured in such a way that a plurality of rotary-type blind shutters 18, 19 are respectively deployed in one row in a first blow-out port warm-air passage 14 and a second blow-out port warm-air passage 15 directly following the heater core 12n outlet, and by interlocking with an open/close operation of the air mix door 10 and 11, the blind shutters 18, 19 are opened and closed.

By virtue of the above-described configuration, as shown in Figure 2, when the first blow-out port 2 side is in a full cool state with the air mix door 10 in the fully open position as shown by the dotted line, the other blow-out port 3 side forms a warm air region and, even if the air mix door 11 is in a half-open position as shown by the dotted line, by virtue of the fact that the blind shutter of the first blow-out port warm-air passage

14 is closed, a blow out of adequately cooled air from the first blow-out port 2 can be achieved without flow of the warm air from the heater core into the first blow-out port passage 3 occurring.

Figure 3 shows another embodiment of the present design and, in this embodiment, the inlet side air mix door of the heater core 12 is omitted and, rotary type blind shutters 20 and 21, and 22 and 23 are deployed respectively in first and second blow out side air passages 8 and 9 and first and second blow-out port side warm air passages 14 and 15 and, by the control of the respective opening/closing positions of each of the blind shutters 20, 21, 22, 23, the mixing ratio of the cool air and warm air is separately adjusted in the air passages wherein, when the one blow-out port 3 is in the full cool state, by controlling the blind shutter 21 of the second blow-out port air passage 9 to a fully open position and the blind shutter 23 of the second blow out side warm air passage 15 to a fully closed position, the heat from the heater core is successively cuts off whereby an increase in the temperature of the full cool side blow out air can be prevented.

As is described above, according to the present design, because it is a configuration in which blind shutters are provided respectively in each warm-air passage leading from a common heater core outlet to each blow-out port, and the flow of warm air to the blow-out ports is able to be separately and successively cuts off, in the case where one blow-out port is in the full cool state and the other blow-out port is in the warm air region state, an increase in the temperature of the full cool side blow out air can be prevented.

In addition, by the provision of rotary-type blind shutters instead of an air mix door, the size of the air conditioner device can be reduced and the structure simplified.

4. Brief Description of the Diagrams

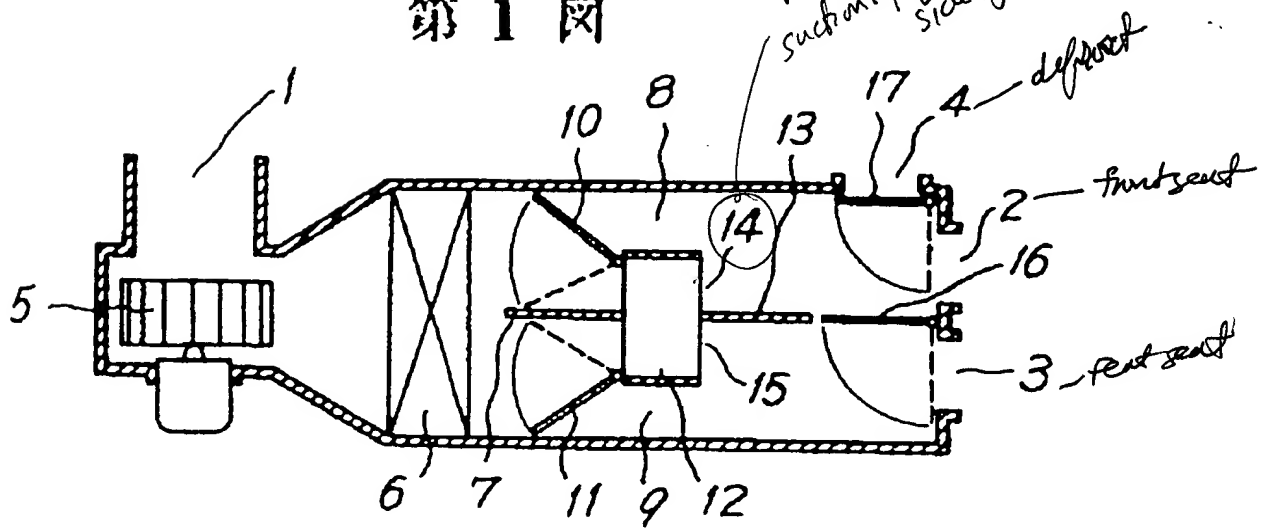
Fig. 1 is a schematic diagram of the structure of a conventional air conditioner device;

Fig. 2 is a schematic diagram of the air conditioner device based on the present design;

and Figure 3 is a schematic diagram which shows another embodiment of the present invention.

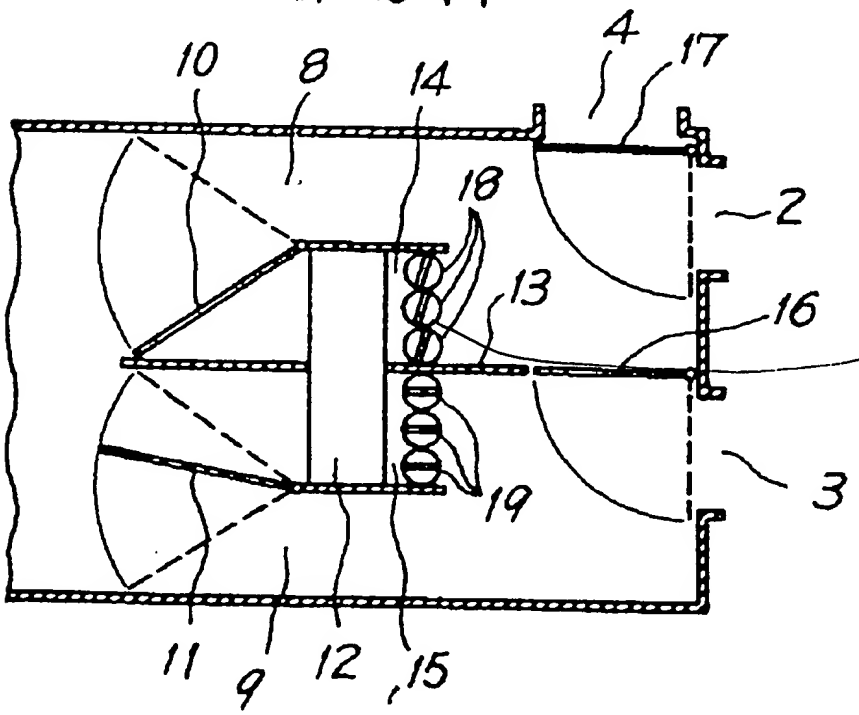
1 Air intake port
2, 3 First and second blow-out ports
4 Defroster blow-out port
6 Evaporator
7 Partition plate
8, 9 Air passages
10, 11 Air mix door
12 Heater core
13 Partition plate
14, 15 Warm-air passages
16 Through-connecting door
17 Defroster door
18, 19, 30, 31, 22, 23 Blind shutters
Fig. 1
Fig. 2
Fig. 3

第 1 図



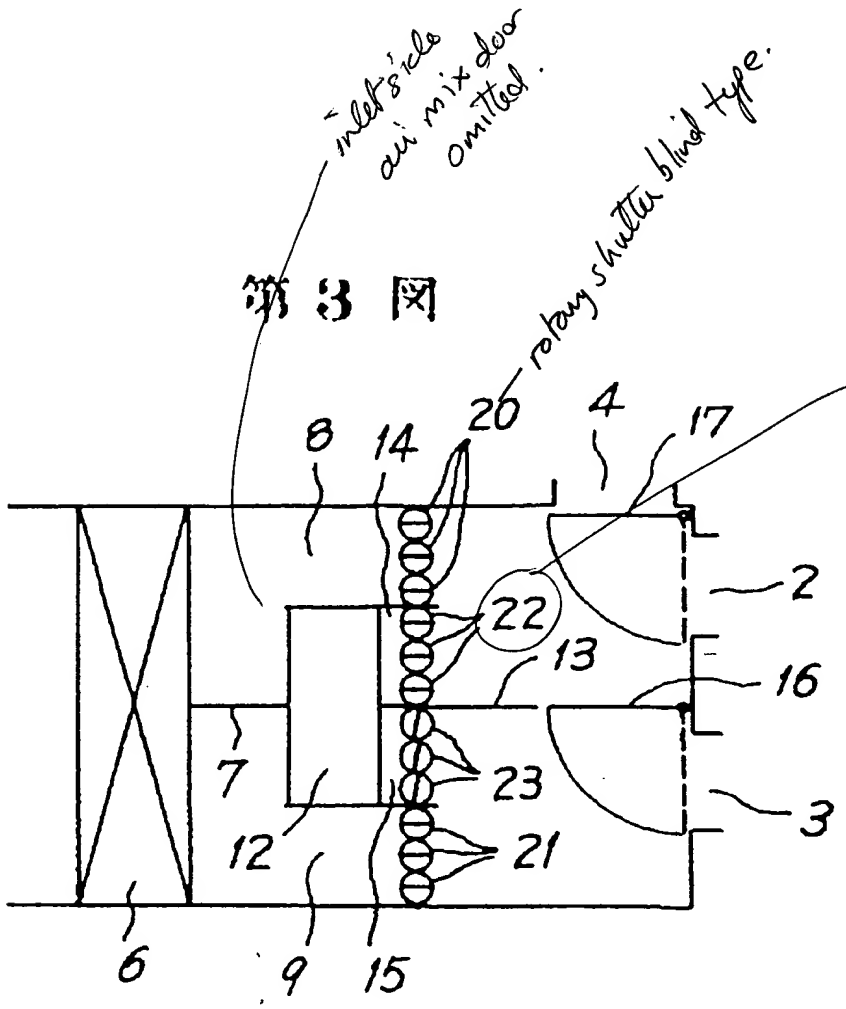
conventional problem
suction mg of air on downstream side of heater core 14.

第 2 図



cuts off heater core during full cooling

第3図


inlet side air mix door omitted.
rotary shutter blind type.
allow air mix & keep suction effect on heater core down during max-full cooling
8
14
26
4
17
2
22
13
16
7
23
3
12
21
6
9
15

(19) 日本国特許庁 (JP)　　(11) 実用新案出願公開

(12) 公開実用新案公報 (U)　　昭58—136813

(51) Int. Cl.³	識別記号	庁内整理番号	(43) 公開
B 60 H 3 00		6968—3L	昭和58年(1983) 9 月14日

審査請求　未請求

(全　頁)

(54) 車両用空調装置

(21) 実　願　昭57—33820
(22) 出　願　昭57(1982) 3 月12日

(72) 考　案　者　荻原義之
横須賀市夏島町 1 番地日産自動車株式会社追浜工場内

(72) 考　案　者　平嶋健三
横須賀市夏島町 1 番地日産自動車株式会社追浜工場内

(71) 出　願　人　日産自動車株式会社
横浜市神奈川区宝町 2 番地

(74) 代　理　人　弁理士　杉村暁秀　外 1 名

明　　細　　書

1. 考案の名称　　車両用空調装置

2. 実用新案登録請求の範囲

1　車室内の少なくとも2個所へ別個に空気を吹出すための吹出し口と、空気取入口からエバポレータを経て前記吹出し口のそれぞれに別個に空気を通す空気通路と、各空気通路にそれぞれ流れる冷気の一部を通して温風とする共通のヒータコアと、この共通ヒータコアの出口からそれぞれ別個に温風を取り出して前記吹出し口近くで前記空気通路内の冷気に混入させる温風通路とを具える車両用空気調和装置において、前記各温風通路にブラインドシャッタが設けられ、少なくとも一方の吹出し口の空気通路がフルクール状態の場合にこの空気通路に通じる温風通路の前記ブラインドシャッタが遮断されるよう構成したことを特徴とする車両用空調装置。

3. 考案の詳細な説明

本考案は、車両用空調装置、特に、車室内の

実開58-136813

例えば、前部座席側と後部座席側のような少なくとも2個所を独立に空調するよう構成された空調装置の改良に関するものである。

従来のこの種の車両用空調装置としては、例えば、第1図に示すようなものがある。

図において、1は空調装置の空気取入口、2および3は第1および第2吹出し口で、第1吹出し口2は前部座席に対して温風または冷風を吹出し、第2吹出し口3は後部座席に対して温風または冷風を吹出すよう配置されており、また、4はデフロスタ吹出し口を示す。

空気取入口1の下流側にブロワモータファン5が設けられ、このブロワモータファン5により空気取入口1を経て吸込まれた空気は、エバポレータ6で冷やされ、除湿された後、仕切板7によつて仕切られた第1吹出し口側空気通路8および第2吹出し口側空気通路9にそれぞれ分れて流れ、通路8側のエアミックスドア10および通路9側のエアミックスドア11の開閉位置に応じて一部の空気が共通のヒータコア12を通り熱風となり、

ヒータコア１２の出口側に設けられた仕切板１３により仕切られた第１および第２吹出し口側温風通路１４および１５を経て第１および第２吹出し口側空気通路８，９内の冷風に混合され、エアミックスドア１０および１１の開閉度に対応する温度の温風となる。第１吹出し口側空気通路８および第２吹出し口側空気通路９のそれぞれに流れる温風は仕切板１３および連通ドア１６によつて分離され、混合することなく第１吹出し口２および第２吹出し口３から吹き出されるよう構成されている。この結果、第１および第２吹出し口２，３からは個別の温風が車室内のそれぞれの場所に吹き出される。また、連通ドア１６が吹出し口３を閉ぐ位置になると吹出し口３から出るべき風は吹出し口２へ集約される結果となる。したがつて、吹出し口２を前部座席用とし、吹出し口３を後部座席用とすることによつて、後部座席に乗員がいない場合に前部座席に対する空調能力の増大に利用することができる。また、デフロスタドア１７によりデフロスタ吹出口４を経て送風することも

できるよう構成されている。

しかしながら、このような従来の車両用空調装置にあつては、1個のヒータコアを共用する構成となつていたため、ヒータコア後流側でヒータコア直後の空気が吸引され、フルクール時の性能が低下してしまうと云う問題点があつた。

本考案は、このような従来の問題点に着目してなされたもので、ヒータコア出口直後の空気通路にブラインドシャッタを配設し、エアミックスドアがフルクール状態の場合にブラインドシャッタを閉じてヒータコアからの熱を遮断することにより上記問題点を解決することを目的としている。

以下、本考案を図面に基づいて説明する。

第2図は本考案の一実施例を示し、従来構造と同一部分は第1図と同じ符号で示し、その説明を省略する。

本例では、図に示すように、ヒータコア13の出口直後の第1吹出し口側温風通路14および第2吹出し口側温風通路15のそれぞれに複数個のロータリ型ブラインドシャッタ18，19をそれぞ

れ１列に配設し、エアミックスドア１０および１１の開閉作動に連動してブラインドシャッタ１８および１９が開閉されるように構成している。

上述の構成としたことにより、第３図に示すようにエアミックスドア１０を実線で示す全閉位置として第１吹出し口２側をフルクール状態とする際、他方の吹出し口３側が暖調状であつてエアミックスドア１１が実線で示す半開位置にあつても、第１吹出し口側温風通路１６のブラインドシャッタ１８が閉止されていることによつて、ヒータコア１３から温風が第１吹出し口側通路５に流入することがなく、第１吹出し口２から充分に冷えた冷気を吹出させることができる。

第３図は、本考案の他の実施例を示しており、この実施例では、ヒータコア１３の入口側エアミックスドアをなくし、第１および第２吹出し口側空気通路５および６ならびに第１および第２吹出し口側温風通路１４および１５のそれぞれにロータリー型ブラインドシャッタ３０および３１ならびに３３および３８を配設し、各ブラインドシャ

ッタ２０，２１，２２，２３のそれぞれの開閉位置を制御することによつて、冷風と温風との混合比を各空気通路で別々に調整できるとともに、一方の吹出し口８がフルクール状態にあるときには、第２吹出し口側空気通路９のブラインドシャッタ２１を全開にし、第２吹出し口側温風通路１５のブラインドシャッタ２８を全開位置に制御することによつてヒータコアからの熱を遮断してフルクール側の吹出し空気の温度が高くなるのを防止することができる。

以上説明してきたように、本考案によれば共通ヒータコア出口から各吹出し口にそれぞれ通じる各温風通路にブラインドシャッタを設け、各吹出し口への温風の流れを別個に遮断し得るよう構成したため一方の吹出し口をフルクール状態として他方の吹出し口を温調域状態とする場合に、フルクール側の吹出し風温が高くなることを防止することができる。

また、エアミックスドアの代りにロータリー式ブラインドシャッタを設けることによつて空調装

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☑ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☑ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.